Emmanuel Botte et Victoria Leitch (dir.)

Fish & Ships
Production et commerce des salsamenta durant l'Antiquité

Publications du Centre Camille Jullian

Conclusions

Emmanuel Botte and Victoria Leitch

DOI: 10.4000/books.pccj.1755
Publisher: Publications du Centre Camille Jullian
Place of publication: Aix-en-Provence
Year of publication: 2014
Published on OpenEdition Books: 6 April 2020
Serie: Bibliothèque d'archéologie méditerranéenne et africaine
Electronic ISBN: 9782491788063

http://books.openedition.org

Printed version
Date of publication: 1 January 2014

Electronic reference
BOTTE, Emmanuel ; LEITCH, Victoria. *Conclusions* In: *Fish & Ships: Production et commerce des salsamenta durant l'Antiquité* [online]. Aix-en-Provence: Publications du Centre Camille Jullian, 2014 (generated 08 avril 2020). Available on the Internet: <http://books.openedition.org/pccj/1755>. ISBN: 9782491788063. DOI: https://doi.org/10.4000/books.pccj.1755.

Conclusions

Emmanuel Botte, Victoria Leitch

The papers presented in this volume have made an important contribution to scholarship on the subject, summarized here from three perspectives. First, we look at methodological questions and what we can add to our knowledge of the fish products themselves; next, is an investigation of the workshops and analyses on the development and decline of fish production in the western Mediterranean; and finally evidence from the containers is assessed.

1. Methodology: the contribution of experimental archaeology and scientific analysis of fish products

Terminology presents one of the greatest problems when studying fish production in antiquity. There is a tendency to conflate – for lack of a better alternative - the simple terms 'salted fish' and 'fish sauce'. As André Tchernia points out, this equates, in today's world, to study cod and *nuoc mam* as homogeneous products, which they certainly are not. To move forward, we must search outside the written sources, which, for over half a century have dominated research on this subject.

There are three principal areas that will help progress studies. The first of these is experimental archeology. S. Grainger[1] suggests that the ancients did not have an exact knowledge of the products they consumed and that this partly explains our confusion today. Grainger proposes that *garum* corresponds only to the product manufactured with the guts and blood of the fish, while Liquamen, the most common type, was made from the whole fish. C. Driard then looks at the nature of the goods. He undertook a set of experiments to detect the levels of salt used in the workshops of Gaul Lyonnaise.

The second research area is the scientific analysis of fish remains. In Herculaneum, the discovery of a sewer composed of human and domestic waste enabled E. Rowan to demonstrate different modes of fish consumption in one neighbourhood of this coastal city. Her study illustrates the significant and varied consumption of fish (whole, in pieces, but also boiled, fried or as a sauce), whose species varied according to the seasons. A. Bardot's study is the first systematic investigation of the phenomenon of trade in oysters at a supra-provincial scale. The originality of the study lies in its illustration of different modes of transporting oysters, such as leaving the flesh in its shell, or trading the flesh only, which involved prior preparation using dry salt or cooking brine. T. Theodoropoulou then shows the magnitude of the potential that Greece has to offer in the study of fish consumption and it is hoped that further investigations will help to complete the picture.

The third methodological tool is chemical analysis. Unlike wine or oil in particular, chemical analyses for the identification of fish remains have not yet been sufficient to identify definite markers, but N. Garnier has found that sterols appear to be the best candidate so far. We must therefore further develop research in this direction in order to identify a common protocol.

2. Production sites

C. Driard's research, although dedicated to the operation of workshops in Brittany rather than their chronology, uses new and previous investigations to re-interpret their duration and functioning. The archaeology demonstrates that fish production was carried out in the second and third centuries only. Sardines (*Sardina pilchardus*) seem to be the most common remains found in the basins. However, the sardines were found in the basins after their final use, so we must be cautious about overstating their importance. I. Vaz Pinto, A. P. Magalhães and P. Brum offer a neat summary of the chronology at Tróia as well as its productive capacity, unmatched by any site throughout the Mediterranean.

1. We could regret that in her contribution, S. Grainger completely ignored the previous bibliography, especially the French one: P. Grimal, Th. Monod, Sur la véritable nature du *garum*, *REA*, 54, Fasc. 1-2, 1952, p. 27-38; C. Jardin, *Garum* et sauces de poisson de l'Antiquité, *RStLig*., XXVII, 1961, p. 70-96.

Evidence from the 25 visible workshops suggests three phases: the first workshops date to the beginning of the Tiberian period, which parallels the amphora workshops on the other bank of the Sado estuary. There is a break at the end of the second century with the abandonment and destruction of the workshops. In the third to the early fourth century, new, small workshops emerge, and new amphora types. A final expansion occurs in the fourth century, which is marked by the abandonment of the site during the first half of the fifth.

Between the Atlantic Ocean and the Mediterranean Sea, the site of Cadiz is undoubtedly one of the most enlightening, because it gives us an overview of production from Phoenician times to late antiquity. The industry began with small installations that remain little known today, but A. Saez Romero is able to demonstrate that there is a turning point in the scale of the workshops from the late second century BC, and then in the Augustan period more complex production sites were created.

Several papers focus on the southern shores of the Mediterranean. Many of the most important and wealthiest sites in Roman North Africa lay along its coast, sites which were also involved in major maritime trade across the Mediterranean. Oil, wine and grain were the main foodstuffs exported from the African shores, but evidence for a significant trade in fish products is now being recognized, largely on account of new scientific analyses. Four papers at the Fish and Ships workshop looked at evidence from North Africa, from regions that have not generally received much attention in the literature, particularly in connection with fish production and trade. The regions are Tipasa in Algeria, the lesser Syrtes (Gulf of Gabes), southern Tunisia, Cyrenaica in Libya and sites in the Libyan Sahara.

Fish production at Tipasa in Algeria has been known for decades, but T. Amraoui's new contribution draws attention to the evidence, giving it a chronological framework. There are circular and rectangular vats, but it is not known whether these different shapes represent a technological or chronological difference. It seems that fish production began in the 3rd century, probably winding down in the mid 4th and perhaps continuing into the 6th century. There is also a house, the Maison des Fresques, with *dolia*, in a late context, which could have been used for making fish sauce, as was known also in Pompeii. Looking at the size of the sites and the lack of amphora production, T. Amraoui deduces that fish production was probably for local consumption only, stored in barrels and re-used amphorae, though exportation cannot yet be ruled out.

The Gulf of Gabes, a bridge between Byzacena and Tripolitania, is clearly a productive region, but it requires more excavation and systematic survey, though the Franco-Tunisian coastline survey did highlight that fish production was very much part of its economic landscape. New research directed by A. Drine and E. Jerray has been trying to link amphora production with fish processing sites, to provide much needed information on the scale and market for fish products in the area. There is evidence for vats, probably for fish, and at least four ceramic kilns. The chronological information from the Gulf of Gabes is not very precise, but suggests activity in the late 1st to 4th century, not only for fish production, but also for wine and oil.

Further east, the coastal region of Cyrenaica in Libya has recently been surveyed by M. Hesein. He pinpointed six sites with potential fish production facilities. The cape of Phycus seems the most likely, where there is evidence for industrial activity including remains of rectangular tanks. At Phycus itself, Aptouchou and Kainopolis there are rock-cut vats, however the shapes are more suggestive of storage for other products like wine, grain or water. Excavation and scientific analyses of the vat contents is needed to confirm the status and scale of fish production in this area. At the moment, the evidence suggests activity in the Roman period, but we lack a precise chronology and therefore how it fits in with other regions of North Africa and its trading partners. For instance, was fish production carried out differently in this area, using different types and shapes of vats, or was fish production fairly insignificant from a trading point of view, which would explain the lack of confirmed fish factories?

Finally, far from the Mediterranean, M. Čechová's paper on the site of Chersonesos in the Black Sea confirms that fish production was a major industry between Antiquity and the Middle Ages, which has important implications for the economy of the region.

3. Containers

Research on the types of container used for fish products is far from complete. A number of different methods of transportation and commercialization have been discussed in this volume, but more work needs to be done analyzing the contents of potential fish product containers and creating more secure typologies for the amphorae used to transport them.

In North Africa there are many fish production sites, but conversely, few with associated amphora production sites. In some cases it is possible that fish production was for local consumption only, so amphorae may not have been needed. In other cases, for instance at Tipasa, this may simply be due to a lack of excavation, particularly in extra-mural areas where you would expect amphora production to be located.

In the Gulf of Gabes, the amphorae are principally Tripolitanian I and III and Dressel 2/4, which are generally associated with oil and wine. Survey around one site, Henchir Mdeina, found sherds of Africana IIA and Tripolitanian II, though no associated kiln site. In effect, the question of amphora types associated with fish production remains unanswered but there is great potential in future for scientific analyses to shed light on this question.

The question of production in Cyrenaica is still too little studied to draw any meaningful conclusions – for both fish production and its containers. The scale and chronology for fish production along the Cyrenaican coast thus remains uncertain and so far we cannot say if the local production was limited to local trade and/or for export.

Fish trade in the Libyan Sahara is discussed by V. Leitch, who finds that the evidence for fish products in the desert was rather thin. This could be for three reasons. First, that there was not much demand for it, secondly that it was too expensive to transport and thirdly that fish production along the Libyan coast may not have been on a large-scale, so it was rarely exported. Looking at scientific analyses of the Tripolitanian II amphora, heralded as a container for fish products, it seems, on closer investigation, that this is rather speculative and there is in fact very little evidence to support this designation, and instead this amphora type was probably for wine. Fish production is attested at Sabratha, but until further excavations and analyses have been undertaken, the size and importance of fish production all along the Libyan coast remains unknown.

Outside Africa, D. Djaoui, G. Piquès and E. Botte demonstrate that we must not simply focus on amphorae and that small ceramic containers could equally have been used for fish products, as occurred in central Italy. C. Nervi illustrates how many gaps there are in our knowledge of the Sardinian fishing industry – one of the largest islands in the Mediterranean. Her research so far points to the importation of fish products, but little is known about production on the island.

4. Where we are now

This volume hopes to have brought significant new insights into scholarship on fish production and trade, mainly during the Roman period. Nevertheless André Tchernia writes "La repartition de ces différents produits dans les différents types d'amphores, la typologie des installations selon l'objet de leur production ne sont pas des questions résolues". Further, some regions (such as Algeria, Libya, Greece and Sardinia) lack systematic research – excavation and survey – meaning that a broad overview of the state of the question is not yet possible. What these papers have achieved is to open up new and important questions, and to demonstrate how much variation there was in the productive landscape from east to west along the Mediterranean coast – probably due to a combination of fishing conditions, political evolutions and their impact on trading networks.

Achevé d'imprimer en août 2014 par
l'imprimerie Sepec
à Peronnas
Dépôt légal : octobre 2014